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AN ESSAY  
ON THE FLUCTUATIONS IN THE  
SUPPLIES OF GOLD,

WITH RELATION TO  
PROBLEMS OF POLITICAL ECONOMY.

BY  
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ON  
THE FLUCTUATIONS  
IN  
THE SUPPLIES OF GOLD.

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It is an ancient remark of Herodotus (iii., 106) that in the unequal distribution of the goods and treasures of the earth, the fairest productions have been imparted to its extremities. This observation was not founded merely on the gloomy feeling (so characteristic of humanity) that happiness dwells far from us, but it expressed as well the fact that, by means of commercial intercourse, the Greeks, as inhabitants of the temperate zone, were dependent on distant lands for gold and spices, amber and tin. So that when, by means of the commerce of the Phœnicians, of the Edomites on the Gulf of Acaba, of Egypt under the Ptolemies and Romans, the long-concealed coasts of Southern Asia came gradually to be explored, the productions of the warmer latitudes were received more direct from their native soil; and in the fertile imagination of man the metallic treasures of the earth were driven back further and further towards the east. Twice have the same people (the Arabians), during the epoch so important for commerce, namely, the æras of the Lagidæ and the Cæsars, as well as at the conclusion of the fifteenth century—the period of the Portuguese discoveries—pointed out to the western nations

the route to India. Ophir (the Dorado of Solomon) extended to the eastward of the Ganges. There, also, was supposed to be situated Chrysé, which so long engaged the attention of the travellers of the middle ages, and which was considered, at one time, as an island, at another, as part of the Golden Chersonesus. The quantities of gold which, according to John Crawford, Borneo and Sumatra bring into circulation, even at the present day, explain the ancient celebrity of those regions. Near to Chrysé (the land of gold, according to the ideas of a systematizing geography) must symmetrically be situated a silver island (Argyré), in order to unite, as it were, the two precious metals—the wealth of Ophir and the Iberian Tartessus. The geography of the middle ages reflected, under various forms, the geographical fables of classical antiquity. In the works of the Arabians, Edrisi and Bahai, we find mentioned, at the extremity of the Indian Ocean, an island (Salahet) possessing silver sands; and near it Saila (not to be confounded with Ceylon or Serendib), where dogs and apes were said to wear golden collars.

In determining, however, the peculiar region of gold, and of all the precious productions of the earth, the idea of remote distance was mixed up with that of tropical heat. “So long,” writes, in 1495, Mossen Taime Teener, a Catalonian lapidary, to Christopher Columbus, “as your excellency does not find black men, you must not look for great things, real treasures, such as spices, diamonds, and gold.” This letter was recently found in a book printed at Barcelona in 1545, and bearing the singular title of “Sentencias Catholicas del Divo Poeta Dante.” Yet the gold productiveness of the Ural mountains, which extend northwards to where the snow scarcely thaws during the summer months, and the diamonds, which (during my Siberian expedition, made at the request of the Emperor Nicholas in 1829) were discovered by two of my companions on the European declivity of the Ural, near to the 60th deg. of lat., do not bear out the connexion of gold and diamonds with tropical heat and coloured men. Christopher Columbus, who ascribes a moral and religious



value to gold, "because," as he says, "whoever possesses it obtains what he will in this world, nay, even (by the payment of masses) brings many souls into paradise"—Christopher Columbus was entirely devoted to the system of the lapidary Teener. He looked for Zipangu (Japan), which was given out as the gold-island, Chrysé; and while sailing (14th of November, 1492) along the coasts of Cuba, which he took for part of the continent of Eastern Asia (Cathay), he writes, in his log-book, "from the great heat which I suffer, the country must be rich in gold." Thus did false analogies cause to be forgotten what classical antiquity had recorded of the metallic treasures of the Massagetæ and Arimaspi, in the extreme north of Europe: I say of Europe, for the barren table land of Northern Asia, the modern Siberia, with its pine forests, was considered as a wearisome continuation of the Belgian, Baltic, and Sarmatian plains.

If we cast a glance over the history of commercial intercourse in Europe, we shall find the richest gold mines of ancient times in Asia. From the termination of the middle ages, and for three centuries later, they belong to the new world. At the present day, and since the commencement of the nineteenth century, the most abundant supplies are again found in Asia, although in different zones of that continent. This change in the direction of the current, this compensation presented by accidental discoveries in the north, when the supply of gold suddenly ceases in the south, is deserving of serious consideration, of examination according to numerical data; for in political as well as in the observation of natural phenomena, numbers are ever decisive; they are the last, inexorable judges, in the much-disputed questions of political economy.

We learn from the acute researches of Bökhs\* how, on the opening of the east by means of the Persian war, and the great Macedonian expedition to further Asia, gold gradually accumulated among the Greeks of Europe; so that, in the age of Demosthenes, for in-

\* *Political Economy of the Athenians.*

stance, the precious metals were of nearly five times less value than in that of Solon. The stream flowed at that time from east to west, and the influx of gold was so abundant that the relation of gold to silver, which in the time of Herodotus was as 1—13, on the death of Alexander, and for more than one hundred years afterwards, stood as 1—10.† The less general the commercial relations of the ancient world, the greater and more sudden the changes the relative value of gold and silver must necessarily undergo. Thus, we find in Rome that, owing to the local accumulation of one of the precious metals, shortly after the conquest of Syracuse, the relation of gold to silver as 1—17 $\frac{1}{7}$ ; while under Julius Cæsar it fell, for a time, to as low as 1—8 $\frac{1}{4}$ . The more inconsiderable the quantity of bullion already existing in a country, the more easily, by means of influx from without, may these extraordinary fluctuations be brought about. In the modern world, the universality and rapidity of communication, which restores the equilibrium, as well as the amount of the accumulated masses of gold and silver already existing, tend to render still more stable the relative value of metals. After the revolution in Spanish America the annual amount was, for several years, reduced to one-third; still the inconsiderable oscillations here and there remarkable are not to be attributed to this cause. It is quite otherwise as to the relation of silver to the so little accumulated, and therefore so unequally disseminated metal, platina.

Of statistical data, shewing, like those of modern days, the productiveness of entire countries, we find nothing among the ancients. The nature of their public administration did not admit of that control which, in more recent times, the over-refined fiscal system of the Arabians has imparted to the states of southern and western Europe. A datum like that given by Pliny (xii., 18), according to which the commerce with India, Serica, and Yemen, absorbed annually

† See Letronne's learned rectification of the monetary hypotheses of Garnier, *Considerations générales sur l'Evaluation des Monnaies Grecques et Romaines*, p. 112; 1817



one hundred millions of sesterces in precious metals—that is, according to Letronne, for the monetary value of that time a weight of 33,000 marks of silver, equal to about £70,000 sterling (only half the annual silver production of the Saxon Erz mountains), remains isolated and problematical. Where general results are wanting, numerical examples of the partial metallic productiveness of certain mountainous countries would be the more valuable, as we should be enabled to compare them with the modern produce of celebrated mining districts, weight with weight in the absolute sense, without relation to the difficult consideration of gold as the measure of value of a given quantity of cereals. Treasures amassed by princes, the result of conquest or of long-continued extortion, are only evidence of what has been accumulated in extensive regions during an unknown number of ages. Results like these may be compared with the data which our staticians venture to put forth concerning the masses of the precious metals existing in a state at a given period. If Cyrus, according to Pliny (xxxiii., 15), amassed by the conquest of Asia 34,000lbs. in unwrought gold, without reckoning that wrought into vessels, still it is scarcely to be compared with two years produce of the Ural. On the other hand, Appian, on the authority of public records, estimates the treasure of Ptolomæus Philadelphus at 740,000 talents, that is, according as we calculate by the Egyptian or smaller Ptolemæan talent, 1017 or 254 millions of Prussian dollars. “Such things,” says the celebrated author of the *Political Economy of the Athenians*, “sound like fable, but I venture not to question their credibility. There was among this treasure much wrought silver and gold. The countries were completely exhausted; taxes and contributions were collected by rapacious prætors. The revenues of Cælesyria, Phœnicia, Judea, and Samaria, alone were leased by Ptolemæus Evergetes for 8,000 talents, whilst a Jew purchased them for double that sum.” Jacob, also, in his excellent work, *Historical Inquiry on Precious Metals*, published at the request of Huskisson, confirms the data of our celebrated philologist. The above higher va-

uation will come near the present circulating medium of France and Belgium, the lower one to that of England. According to Strabo, Alexander collected in Ekbatana eighteen myriads of talents. We must not, however, lose sight of the fact, that while at the present day the precious metals are proportionately distributed over extensive districts, and among a numerous population, they were at that time concentrated on a few points, or in the coffers of princes.

That the golden treasures of the east, by which the western world was inundated, flowed from the interior of Asia, north eastward from Ladakh, from the upper course of the Oxus, from Bactria and the eastern Satrapies of Persia, there cannot exist a doubt; still it is easier to point out the direction of the stream, than its particular sources and their relative productiveness. The scene of the fabulous gold-seeking ants must be sought for far from the griffins of the Arimaspi. The former story would seem to belong to the table land of Raschgar and Aksu, between the parallel chains of the Celestial Mountain and the Kuenlun, where the river Tarim flows into the Lop. We shall again have occasion to recur to the more northern Arimaspi when we come to notice the gold masses of the Ural, lying immediately under the surface of the ground. The fame of Indian wealth resounded in oft mistaken echoes as far as Persia. Ctesias, of the tribe of the Asclepiads, physician to the king Artaxerxes Mne-mon, without appearing to be aware of it, under the figure of a gold spring, most distinctly describes a melting furnace, out of which the liquid metal flows into earthen moulds. Nearer to the Greeks were Lydia, and on the rivers which have their sources in the Tmolus, the gold-producing countries of Phrygia and Colchis. The nature of the quickly exhausted beds of gold sand (gold washings), renders it intelligible to the practical miner why so many of the above-named and recently revisited countries have appeared to the traveller poor in gold. How easy would it be, were we to visit at the present day the ravines and torrent beds of Cuba and St. Domingo, or even the coasts of Veragua, in ignorance of the existing historical testimony, to doubt

of the rich booty afforded by those districts at the conclusion of the fifteenth century? More durable, when not disturbed by external relations, is the subterranean mining in permanent strata of gold ore; precisely because the entire bed cannot be discovered at once, as well as because, by the process of mining by galleries, the mountain is only laid open by degrees, thus affording a more permanent employment to human activity.

How many of the forty gold washings so carefully described by Strabo could be recognised at the present day? This remark, founded on mining experience and analogy, is the more deserving of place here, now that ignorant scepticism so eagerly attacks the traditions of antiquity. That part of Europe known to the Greeks was as far inferior to Asia in metallic riches, as the whole European continent has proved to be, in recent times, to the New World.

The relative productiveness of Europe and America in gold at the commencement of the nineteenth century, the period when the mines of the Spanish colonies were wrought with the greatest activity, was as 1—13; in silver as 1—15. To me it even appears probable that during the Alexandrian and Ptolemæan periods, the proportion would have been still more unfavourable for Europe, especially in gold, could statistical data of this nature be obtained. In Greece itself, it is true, that besides the originally rich silver mines of Laurion, the quantity of gold found in Thessaly, as well as in the mountains bordering on Macedonia and Thrace, was considerable. Iberia, also, was to the Phœnicians and Carthaginians not merely a country of silver. Tarshish and Ophir (the latter either Arabia or the eastern coasts of Africa, or rather, according to Heering, the general name for rich southern countries) were the destinations of the united Hiro-Solomonian fleets. Although, in the metallic abundance of Spain, silver from Bœtica and the neighbourhood of New Carthage was the chief object of foreign commerce, yet Gallicia, Lusitania, and especially Asturias, produced, during many years, 20,000lbs. of gold; that is to say, almost as much as Brazil during its most flourishing period.



It is not surprising, therefore, that the Spanish peninsula acquired, among the Phœnicians and Carthaginians, the reputation of a western El Dorado. It is certain that in many districts which at present discover but faint traces of metallic formation, the earth was at some former period covered, near the surface, with beds of gold sand, or traversed by solid rocks containing fragments of gold ore. The local importance of those mines in southern Europe is not to be denied, though, in comparison with Asia, their productiveness in gold must be deemed insignificant. The latter continent remained long the chief source of metallic wealth; and the direction of the current of gold, as far as Europe is concerned, must be considered as from east to west.

It was Asia itself, however, or more properly the rumours spread by travellers, during the middle ages, of the incalculable treasures of Japan and the Southern Archipelago, which caused a sudden change in the direction of the metallic current. America was discovered, not (as was so long falsely pretended) because Columbus *predicted* another continent, but because he sought by the west a nearer way to the gold mines of Japan and the spice countries in the south-east of Asia. "The greatest geographical error (the notion of the proximity of Spain to Asia) led to the greatest geographical discovery." Christopher Columbus and Amerigo Vespucci both died in the firm conviction that they had touched upon Eastern Asia—the peninsula of the Ganges. The reputation of having discovered a new continent, therefore, could give rise to no dispute between them. In Cuba, Columbus wished to deliver up the credentials of his monarch to the Grand Khan of the Moguls. He mistook that island for Mangi, the southern part of Cathay (China), and there expected to find the celestial city, Quinsay (now Hang-tscheu-fu), described by Marco Polo. "The island of Hispaniola" (Hayti), writes Columbus to the Pope Alexander the Sixth, "is Tarschisch, Ophir, and Zipangu. In my second voyage I have discovered 140 islands and 333 miles of the continent of Asia (de la tierra firme de Asia)." This West-In-

dian Japan shortly produced golden pebbles (*pepitas de oro*) of eight, ten, and even twenty pounds weight. The newly-discovered America now became the chief source of the precious metals. The fresh stream, flowing from west to east, shortly traversed Europe, since, owing to the increasing intercourse created by doubling the Cape of Good Hope, a more considerable value was required in return for the spices, silks, and colouring materials of southern and eastern Asia. Before the discovery of the silver mines of Tasco (1522), in the western declivity of the Mexican Cordilleras, America furnished gold only; and Queen Isabella, of Castile, saw herself compelled considerably to alter the legal relation of the precious metals to each other. The early but hitherto little noticed edict of Medina may be explained by this circumstance, and by the accumulation of gold on a few points in Europe. I have attempted to prove, in another place, that from 1492 to 1500 the entire importation of gold from the then discovered regions of the New World, scarcely afforded an yearly average of 2000 marks.

Pope Alexander the Sixth, who conceived he had presented to the Spaniards one-half of the globe, received in return, from Ferdinand the Catholic, a quantity of golden pebbles from Hayti, for the gilding of the entablature of the basilic of Santa Maria Maggiore, "as the first-fruits of the newly-discovered country." An inscription on the metal mentions, "*quod primo Catholici reges ex India receperant.*" So great was at that time the activity of the Spanish government, that so early as 1425, as we learn from the testimony of the historian Munoy, a miner (Paolo Belvio) was sent with a provision of quicksilver to Hayti, in order to expedite the gold washing by means of amalgamation. It is very curious to read, in a newly-discovered part of the geography of the sherif Edrisi, recently published, "that the negroes in the interior of Western Africa, as well as the inhabitants of the fertile settlement of Wadi el Alaki (between Abyssinia, Bodja, and Nubia), washed gold by means of quicksilver." The Nubian geographer of the middle of the twelfth century speaks of it

as a thing long known. During the ages of classical antiquity, we find mention of quicksilver having been very generally used for the purpose of detaching the gold from the threads of old fringe, never, however, of a technical application of it, on a large scale, in those processes for purifying the precious metals which have been so circumstantially described to us by ancient writers.

The relative value of gold and silver is at all times modified rather by the discovery of new than the drying up of old sources. Thus, for the second time since the discovery of the great Antilles, the price of gold rose about the middle of the sixteenth century, on the opening of the rich silver mines of Potosi and Zacatecas in Peru and North Mexico. The result of my very careful enquiries shews that, up to the opening of the Brazilian gold washings at the commencement of the eighteenth century, the importation of American gold bore a relation to that of silver, weight for weight, as 1 to 65. At the present day, this proportion, if we embrace in one view the European commerce in metals with all parts of the world, is scarcely more than 1 to 47. Such, at least, is the result of a comparison of the masses of both metals contemporaneously existing in Europe in a state of coinage. The data contained in the otherwise excellent work of Adam Smith, as well as the greater part of the numerical results therein given, are extremely incorrect, in the above-named proportion, by more than the half. Among the civilized, and consequently the European nations carrying on immediate intercourse, the relative value of gold and silver fluctuated, during the first hundred years subsequent to the discovery of the new continent, between  $1-10\frac{7}{8}$  and  $1-12$ ; in the last two centuries between  $1-14$  and  $1-16$ . This fluctuation by no means exclusively depends upon the relative quantities of the metals annually obtained from the bowels of the earth. The relative value of the two metals is dependent on a variety of causes; for example—the expenses of production, the demand for consumption, and conversion into trinkets and other metallic wares. So many different causes acting at once, as well as the



present facility of intercourse, and the enormous masses of precious metal already accumulated in Europe, render any considerable or continued variation in the relative value of gold and silver impossible. Experience has shewn this on any sudden interruptions of the production—such as the outbreak of the revolution in Spanish America, or the immoderate consumption of the precious metals by one of the more considerable mints. In England, for instance, in the ten years from 1817 to 1827, more than 1,294,000 marks of gold were converted into money, and yet this monopoly of gold only raised the proportion of it to silver in London from  $1-14\frac{97}{100}$  to  $1-15\frac{60}{100}$ . Since then, the exchangeable value of gold, as compared with silver, has undergone but little depression; for at the conclusion of the year 1837 a pound of gold might be purchased in London for  $15\frac{65}{100}$  lbs. silver. We shall shortly furnish numerical data for the solution of the question as to what changes may be attributed to the combined effect of the Ural and North American mining.

The quantity of precious metals imported into Europe, from the discovery of America until the breaking out of the Mexican Revolution, was 10,400,000 Castilian marks (2,381,600 kilogrammes) of gold, and 533,700,000 marks (or 122,217,300 kil.) of silver; their united value amounting to 5,940 millions of piastres, of 4s. 4d. each.

The silver obtained, during this period, from the American soil, is calculated, in this valuation, at the standard of 0,903 for the piastre, which, for 122,217,300 kils. piastre silver, will give but 110,362,222 kils. pure silver; which would form a ball of  $83\frac{7}{10}$  Parisian feet in diameter. A similar reduction to form and dimensions I consider as allowable, as analogous graphical descriptions. If we compare the result of 318 years produce of Spanish America with that of one year's production of iron in a single country of Europe, we shall have, according to the datum of my friend, the celebrated geognost, Dechen, a ball of iron for Great Britain of

148, for France 111, for the Prussian monarchy of 76, Parisian feet in diameter. So great is the difference in quantity of the two metals, silver and iron, in that part of the earth's superficies accessible to man.

Whilst the stream of gold and silver flowed from east to west, Spain was merely the channel of communication. But little of it remained in the country, still less in the coffers of the king.\* Of Charles the Fifth's pecuniary difficulties, Ranke has treated in his work on Spanish finance. The talented historian has, by means of fresh documents, enlarged and confirmed my official proofs of the inconsiderable quantity of precious metals furnished by the American mines and the so-styled Inca treasures, up to the year 1545.

A more intimate acquaintance with the history of the metallic productiveness, or gradual discovery of rich and considerable beds of ore in the New World, enables us to explain why the depreciation in the value of the precious metals, or (what is the same thing) the increase in the price of grain and other necessities, first began to be felt towards the middle of the sixteenth century, and more especially between 1570 and 1595. The abundance of silver from the mines of Tasco, Zacatecas, and Pachuca, in New Spain, of Potosi, Porco, and Oruro, in the Peruvian Andes, then first began to be regularly diffused throughout Europe, and effect a material alteration in the price of wheat, wool, and manufactured wares. The actual opening and working of the mines of Potosi, by the Spanish conquistadores, took place in the year 1545; and the famous sermon preached by

\* "Ferdinand the catholic," writes his admirer and friend, Anghiesa, a few days after that great monarch's decease, "was so poor that it was difficult to procure money to furnish decent clothing for the servants at his funeral. We give the remarkable passage from the letter to the Bishop of Tuy:—*"Madrilegium villulam Regis tibi alias descripsi. Tot regnorum dominus, totque palmarum cumulis ornatus, christianæ religionis amplificator et prostrator hostium, Rex in rusticana obiit casâ, et pauper contra hominum opinionem obiit, vix ad funeris pompam et paucis familiaribus præbendas vestes pullatas, pecuniæ apud eum, neque alibi congestæ, repertæ sunt. quod nemo unquam de vivente judicavit."*

Latimer before Edward the Sixth, in which he expresses his anger at the increasing price of all the necessities of life, is of the 17th of January, 1548. The English corn laws, between 1554 and 1688, indicate the accumulation of the precious metals still better, perhaps, than the prices of grain collected by Fleetwood, Dupré de St. Maur, Garnier, and Lloyd. It is well known that the importation of wheat is only allowed when the price of a given measure has reached a certain standard prescribed by the law. Now, in the reign of Queen Mary (1554), this limit was six shillings per quarter; under Elizabeth (1593), about twenty; and in the year 1604, under James the First, more than twenty-six. These numerical data are undoubtedly of great value; still considerable caution is required in the interpretation of them, since the problem of the prices of corn, as well as of prices in general, is a very complicated one; and varying theoretical views, the influence of the landowners, as well as the unequal local accumulation of money and wares, produce their effects on the legislation of every period. Besides, the atmospheric changes (the mean warmth of the spring and summer months) which affect the cultivation of cereals, do not embrace at the same moment the entire agricultural Europe. An unequal increase in population, and the consequently increasing intercourse, multiply the demand for metals. In the standard which we seek and think to find in the fluctuating prices of grain, we have to deal with two contemporaneously fluctuating quantities. The increased price of grain, even for a particular country, no more determines the relative increase of gold, than it informs us concerning the state of weather and the quantity of sunbeams. Data which should embrace a considerable portion of Europe contemporaneously, are nowhere to be found; and careful enquiries have shewn that in the north of Italy the advance in the prices of grain, wine, and oil, from the fifteenth to the eighteenth century, was much less considerable than we might have reasonably concluded from what is known to us of England, France, and Spain, in which latter countries the prices of grain, since the discovery of Ame-



rica, have advanced four and even six-fold. Here it may not be superfluous to insert a numerical result, based on the average prices of fourteen years for the whole of the Prussian states, and drawn out with the greatest industry, at my request, by the Counsellor Hoffmann. In the year 1838, when for a pound of gold you might purchase, in Berlin,  $15\frac{2}{13}$  lb. of pure silver, 1611 lb. of copper, and nearly 9700 lb. of iron, the pound of gold, according to the averages of 1816 to 1829, and 1824 to 1837, is exactly equal, in value, to 20,794 lb. of wheat, 27,655 lb. of rye, 31,717 lb. barley, and 32,626 lb. of oats.

The apprehensions respecting the diminished importation of gold and silver from the New World—caused by the appearance of the important, but in Germany not sufficiently appreciated, work of Jacob on precious metals—have not been realized. The depressed condition of the metallic production from 1809 to 1826, notwithstanding the unsettled state of the liberated Spanish America, has revived to three-fourths of what it was at the period when I quit-  
ted those countries. In Mexico, in fact, according to the latest intelligence, for which I am indebted to the active charge d'affaires of Prussia, Mr. von Gerolt, the produce had risen to twenty or twenty-two millions of piastres, to which, besides Zacatecas, the newly-opened mines of Fresnillo, Chihuahua, and Sonora, had principally contributed. During the last peaceable period of Spanish dominion, I could not estimate the mean produce of the Mexican mines at more than twenty-three millions of piastres. The control was then easier, as there existed only a central mining commission, and severe laws restricted the commerce to a more limited number of ports. The greatest activity which at any time prevailed was in the central mint of Mexico, which, from 1690 to 1803, furnished exactly 1353 millions of piastres in inland gold and silver; but, from the discovery of New Spain to the liberation of the country, probably 2,028 millions—that is, two-fifths of the entire amount of precious metals which the whole of America has poured into the old continent—was furnished during this period.

The assertions so often made, in consequence of unsuccessful speculations, concerning the exhaustion of the Mexican mines, are disproved as well by the geological formation of the country, as by the most recent experience. The mint of Zacatecas alone, during the unsettled period from 1811 to 1833, coined more than 66,332,000 piastres, and in each of the last eleven years (1822 to 1833) between four and five millions of piastres.

1829	...	...	...	...	4,505,180 piastres
1830	...	...	...	...	5,189,902 „
1831	...	...	...	...	4,469,450 „
1832	...	...	...	...	5,012,000 „
1833	...	...	...	...	5,720,000 „

In Zacatecas, a single gallery—the Veta Grande—which had been wrought since the sixteenth century, and up to 1738 frequently furnished as many as three million piastres in a year, has brought the following quantities into circulation :—

1828	...	...	...	...	117,268 marks of silver
1829	...	...	...	...	235,741 „
1830	..	...	...	...	279,288 „
1831	...	...	...	...	272,095 „
1832	...	...	...	...	258,498 „
1833	...	...	...	...	209,192 „

It is true that Guanaruato, on the other hand, which, even in my day, furnished annually 755,000 marks of silver, has of late years fallen to less than half. The produce was,

1829	.....	of gold, 852 marks ;	.....	of silver, 260,494 marks
1830	.....	„ 1058 „	.....	„ 284,386 „
1831	.....	„ 622 „	.....	„ 258,500 „
1832	.....	„ 1451 „	.....	„ 300,612 „
1833	.....	„ 1144 „	.....	„ 316,024 „

And should those highly-favoured regions ever enjoy the blessings of peace, the extended cultivation of the soil must necessarily lay open fresh strata. In what region of the globe besides, are we enabled to produce instances of a similar productiveness in silver? We must not forget that near Tombrerete, where mines were opened as early as 1555, the family of Fagoaga (Marquès del Apartado), within the space of five months, in an extent of ninety-six feet in length, obtained from falls of red ore of the Veta Negra, a clear profit of four millions of piastres; and in the mining district of Catorce, an ecclesiastic (Juan Floreo), between 1781 and 1783, from the shaft called, by the common people, "the Purse of God the Father" (la Bolsa de Dios Padre), obtained three and a half millions of piastres.

The quantity of gold produced in Spanish and Portuguese America has diminished considerably more than that of silver; this diminution, however, must be dated much further back than the outbreak of the political revolutions in the tropical countries. I have already pointed out, in another place, how erroneous were our impressions in Europe, up to the commencement of the present century, concerning the continuance of the productiveness of the Brazilian gold washing, and how far we had confounded its flourishing days with its more recent condition. The report (so important for the gold trade) of the Bullion committee first threw some light on this subject. I am indebted for the most authentic details to the communications of the late director general of mines, Freiherr von Eschwege. Jacob's work on the precious metals contains merely some trifling additions. From 1752 to 1761 the gold produce of Minas Geraes varied from 6,400 to 8,600 kils. This production is certainly considerable, and far exceeding that of the Ural and the Altai at the present day; but we must recollect that, in 1804, Spanish America furnished nearly 10,400 kils. of gold, viz. :—



New Grenada	...	...	...	...	...	4,700	kilogrammes.
Chili	...	...	...	...	...	2,800	"
Mexico	...	...	...	...	...	1,600	"
Peru	...	...	...	...	...	780	"
Buenos Ayres	...	...	...	...	...	500	"

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10,380 kilogrammes.

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The production of Minas Geraes had already fallen, in the intermediate 1785—1794, to 3,300 kils; between 1818 and 1820, to 428 kils. This is in accordance with the account furnished by the Chevalier de Schaffer, according to which, in the year 1822, only twenty-four arrobas (350 kils.) were delivered to the smelting furnaces of Villarica. Since that time, owing to the exertions of some English companies, the Brazilian gold mining appears to have somewhat recovered itself. The decline, however, of the gold washing, is rather to be attributed to the disposition to cultivate colonial produce, favoured as it is by the continued infamous importation of slaves from Africa, than to the exhaustion of the beds of ore. Owing to the enormous amount of smuggling at present carried on in the Brazils, it were to be wished that some native thoroughly acquainted with the circumstances of the country would give himself the trouble to discover the annual amount of the gold produced since 1822.

It is a remarkable circumstance in the history of mining carried on by Europeans, that, since the supplies of gold from the Brazils have so far diminished, those of Northern Asia and (though but momentarily) of the southern districts of the United States, have attained an unexpected degree of importance. The mountain chain of the Ural is found to produce gold for nearly 17° lon. Though the Ural, in the years 1821 and 1822, only furnished 27 to 28 pud (440 to 456 kils.) gold, yet the produce of the gold sand gradually rose, in the three following years (1823, 1824, and 1825), to 105, 206, and 237 pud. According to the manuscript communication made me by the Russian minister of finance, Count Cancrén, "Return of the Preci-

ous Metals obtained in the Russian Empire, and refined in the Mint of St. Petersburg," the amount of pure gold was, in

1828	...	...	...	...	209 pud, and 20lbs.
1829	...	...	...	...	289 „ ..... 25
1830	...	...	...	...	347 „ ..... 27
1831	...	...	...	...	352 „ ..... 2
1832	...	...	...	...	380 „ ..... 31
1833	...	...	...	...	368 „ ..... 27
1834	...	...	...	...	363 „ ..... 10

At the period of the expedition which I undertook into Northern Asia, at the request of the Emperor Nicholas, the gold washing was confined to the mountains on the European extremities of the Ural. The Altai [in Mongolisch, the golden mountain] furnished merely the inconsiderable quantity (about 1,900 marks) of gold which could be obtained from the silver ore of the rich mines of Smeïnogorsk, Ridderski, and Syrianowske. Since 1834, however, the industry of the gold washers in this central part of Siberia has been unexpectedly rewarded. A bed of gold sand has been discovered, precisely similar to those on the declivity of the Ural. The house of Popof, so deservedly celebrated for the encouragement it has afforded for improving the intercourse in the interior of Asia, has here also set a laudable example. Among the 398 pud (27,884 marks) of gold, produced by the entire Russian Empire in 1836, 293 pud, 26lbs., were from the Ural, and 104 pud, 15lbs., from the Altai. In the following year the produce of eastern Siberia had already so much increased that the Altai furnished 130 pud, the Ural (from crown and private washings), 309 pud, wash gold. If to these amounts we add 30 pud gold, contained in the ore found in the solid rocks of the Altai, it will give, for the entire produce of Russian gold for the year 1837, precisely 469 pud, or 7,644 kils. The gold washing in the Ural is, therefore, in a very gradual decline; the Altai, however, contributes so much to the general mass, that its produce, as compared with that of the Ural, is already as  $4-9\frac{1}{2}$ .

Concerning the actual situation of the gold sands in the Altai, the most recent information has been communicated by a distinguished geologist, my former travelling companion in the southern Ural, Mr. von Helmersen. The wash gold, which for some years past has been obtained in constantly increasing quantities in the eastern part of the Tunskisch district, does not belong to the great mountain chain itself, which we call the Altaian ore mountain, which Ledebour, Bunge, and Gebler, have explored, and in which the mountain Belucha, with its inaccessible snow peaks majestically raises itself to the height of the Wetterhorn, or the Peak of Teneriffe. The situation of the golden sands is observable on both, but especially in the eastern side of a small mountain chain, which the Altai, in its course from east to west, sends out in the meridian of the Telezkischen Lake, and extends into the parallel of Tonsk. "On the maps," says my friend, Mr. von Helmersen, "this mountain branch, producing wash gold, is distinguished by the names of the Abakauskisch, Kusneychrisch, and Alatau mountains. In direction, internal composition, and formation, it possesses the most striking similarity to the Ural; it is, in fact, a repetition of it, only at less considerable length. The analogy goes so far that here, also, the eastern declivity is rich, the western much poorer, in gold. As it is precisely this western declivity which has been reserved by the crown, so they are almost entirely private adventurers who have profited by the productiveness of the Alatau (this branch of the Ural running towards the north)." The importance of these observations of Mr. von Helmersen cannot escape such geognosts as are familiar with my enquiries concerning the mountain system of the interior of Asia, and with the original views of Elie de Beaumont concerning parallelism and relative antiquity of the different mountain chains. I have not myself seen the northern beds of the Altaian gold sands, as the direction of my journey was from Tobolsk, by Tara, through the Barakinskish steppes, to the western and southern Altai, and from

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1828	...	...	...	...	209 pud, and 29lbs.
1829	...	...	...	...	289 „ ..... 25
1830	...	...	...	...	347 „ ..... 27
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thence to the Chinese frontier posts Chunimailachu, in the province Ili, northward from Lake Saysan.

The wash-gold of the Altai contains more silver than the gold of the Ural. The Siberian merchants, powerfully seconded by the imperial mining department, have now established winter washing also; and the working this new branch of Asiatic industry is the more remarkable and satisfactory in that the workmen consist of well-paid volunteers. According to recent accounts, for which I am indebted to the minister of finance, Mr. von Cancrien, rich sand-beds have been discovered in the Salairskisch chain of mountains, as well as on the river Biriusa, which separates the governments of Teniseisk and Irkutik. For the whole of Siberia, 240 licenses (permission to work the sand-beds containing gold), have been granted.

Such, therefore, is the importance which the influx from the eastward has attained in modern times (the principal object of the present enquiry, being to point out the fluctuations of channel in the gold trade). Those 469 pud of Uralian and Altaian gold (the produce of the year 1837) are worth, in Prussian silver money, 7,211,000 dollars, or about £1,031,650 sterling, which produce is only an eighth less than that of Minas Geraes in Brazil, in the richest years of the flourishing period from 1752 to 1761; one-third, however, less than the produce of New Grenada, Chili, and Mexico, shortly before the breaking out of the revolution in Spanish America. If we consider the enormous extent of the Siberian continent, and recollect the rapid increase of gold from the Ural in the years 1822, 1823, and 1824, it will appear extremely probable that the reflux from east to west (from Asia to Europe) has by no means reached its maximum. The produce of eastern Siberia will, perhaps, increase more rapidly than that of the washing of the Ural, where the richest beds were first (and in the beginning, unfortunately, only superficially) worked. In the hydrostatic separation on the washing floors, a considerable quantity of precious metals, which cling to grains of

oxide of iron and other light substances, is undoubtedly lost. This is not the place to enquire whether the ingenious and plausible method suggested by Colonel Anassaw, intendent at Slatoust, of amalgamation with iron and the application of sulphur to the substance thus produced, would be successfully applicable on a large scale. When we consider the size of the masses to be smelted, the difficulty of transporting a sand so poor in gold, as well as the quantity of fuel required, the continued and well-directed experiments hitherto made would seem to have determined its impracticability.

The notions we have obtained, during the last fifteen years, concerning the present productiveness of Northern Asia in gold, lead us almost involuntarily back to the Issedones, Arimaspi, and the gold-guarding griffins, for whom Aristæus of Proconnesus, and, two centuries later, Herodotus, have obtained so lasting a reputation. I had the pleasure of visiting, in the southern Ural, the spot where, a few inches under the turf, masses of brilliant gold, weighing 13, 16, and even 24 Prussian pounds, were discovered. Still larger masses may have lain like pebbles, unobserved, on the surface of the ground. No wonder, therefore, if, even in remote antiquity, this gold was collected by hunting and pastoral tribes; that the fame of such riches should resound to a distance, even to the Grecian colonies on the Euxine—colonies which, at a very early period, had established intercourse with north-eastern Asia, beyond the Caspian Sea. Neither the trading Greeks nor the Scythians came themselves as far as the Issedones; they had intercourse only with the Argippeï. Niebuhr, in his enquiries concerning the Scythians and Getæ (enquiries by no means confirmed by what we have since learned concerning the diversities of race and structure of language among the northern tribes), places the Issedones and Arimaspi to the northward of Orenburg, that is, in the region so rich in gold, now become familiar to us, on the eastern declivity of the Ural. This opinion is supported in the valuable work of the privy counsellor Eichwald, recently published, *On the Ancient Geography of the Caspian Sea*.—

Heeren and Völchen, on the other hand, place this gold country of Herodotus in the Altai, and I admit that the local circumstances appear rather to justify the interpretation. Herodotus describes a trading route, along which, by means of the Issedones and Scythians, the gold of the northern Altai, or at least the fame of it, could reach the Hellespont. In order to penetrate as far as the Argippeï, who are represented as bald-headed, with flat noses and large jaw bones, the Scythians and the Greeks of the Euxine colonies were compelled to employ seven interpreters of seven different languages.\* Since the discovery of such rich beds of gold sand in the mountain chain which the Altai sends out to the northward, in the parallel of Tonsk, the position of the Arimaspi in a region far to the eastward of the Ural, certainly gains in probability. The fable of the gold-guarding griffins of Herodotus, according to the surmise of a learned and intelligent traveller, Adolph Herman, is connected with the fossil remains of antediluvian *Pachydermæ*, so frequently met with in Siberia, which the imagination of the native tribes has transformed into the claws and head of a gigantic bird. "Were we," concludes Mr. Erman, "disposed to find in this arctic saga the prototype of the Grecian one of the griffins, it is strictly true that the northern searchers for ore draw the gold from under the griffins; for gold under beds of earth and peat, filled with these bones, is now, as formerly, one of the commonest phenomena." However attractive this explanation, the circumstance of the fabulous beings (the griffins) being mentioned in the poems of Hesiod is somewhat opposed to it, as is also the fact of their decorating the gates of Persepolis as lion eagles, or Sphinges.

I have already noticed the fact that in the Ural enormous masses of gold are found a few inches below the turf; running water, or other trifling causes, may have so far laid them bare that they touched the very surface of the earth. The discovery of beds of sand containing gold beyond the Obi in Northern Asia, the increase in

\* Herodotus, iv., 24.



amount of one years' produce of the Altaian or Kusnezkisch wash gold to the weight of 130 pud, is an event in the history of the gold trade; an event the more remarkable inasmuch as it belongs to that part of Asia more immediately subject to Europe, and the entire produce will consequently be thrown into the European gold market. However ancient may be the mining in solid ore in Siberia, under the indefinite denomination of "Tschudischer Tschürfe," still the considerable masses of wrought gold found in the graves on first taking possession of that country, may be more readily accounted for by an early discovery of gold pebbles in diluvial soil near the surface of the earth. Müller, the excellent historian of Siberia, relates that a remarkable depreciation in the value of gold in Krasnojarsk took place on the first discovery of the treasures contained in the graves (Karganui).

The interior of Asia, between the mountain ranges of the Himaylaya and the Volcanic Celestial mountain, forms, like China, one great political and commercial community. However little we may know of those regions since the brilliant periods of the Mongol dynasty, at the close of the thirteenth century (from the travels of Marco Polo), still much information has recently been obtained (in the south through India, in the north through Siberia) by Europeans concerning the gold-sand beds of that extensive tract. The journals of Calcutta inform us that the rivers in the whole of western Thibet contain gold, which the natives obtain by amalgamation.

The old Indian mythologists make the ruler of the north (Kuvera) the god of riches also; and it is remarkable enough that the residence of this deity (Alakâ) must be sought for, not on the Himaylaya itself, but on the Kailâsa, beyond the Himaylaya, in Thibet. Still further to the north-west, beyond the mountain chain of the Kunlun, which separates the districts of Ladak and Khotan, Heeren places, and, I think, with much probability, the great golden sand deserts, visited by the Indians bordering on Kaschmir; and containing "ants less than dogs, but larger than foxes." It is on the west-

ern declivity of Bolor that the most recent and intelligent explorer of this terra incognita (Alexander Burnes) has described the gold sandbeds of Durwaz and the upper course of the Oxus.

Almost at the same moment in which the Ural opened its golden treasures, and began to replace what the diminished produce of Brazils was no longer in a condition to supply, strata containing gold were discovered in the southern part of the Alleghany, in Virginia, North and South Carolina, Georgia, Tennessee and Alabama. The most flourishing period of these American gold washings was from 1830 to 1835.

It is true that, in the last eight years, they have not produced more than  $4\frac{1}{2}$  millions of dollars; the appearance, however, of gold so near to the coasts of the Atlantic is, in a geological point of view, deserving of more attention than has been given to it in Europe. It is a circumstance possessing great historical interest also, since the quantity of gold found by the first Spanish conquistadores, among the natives of Florida, need no longer be considered as the result of ancient intercourse with Mexico or Hayti. Jacob, in his oft-cited work, was only enabled to estimate the produce of the North American gold washing at 130,000 dollars; but in a few years subsequently it rose to 800,000, and even a million. In the county Cavarras (North Carolina) was discovered a golden pebble weighing 28lbs. English, and near it several from 4 to 10lbs. Since my return from Siberia I have incessantly, but almost fruitlessly, attempted to procure more precise information concerning the progress of the gold washing in the southern states; and it is only quite recently that (owing to the kindness of the present bank director, Mr. Albert Gallatin, one of the most intelligent men of the present day) my wishes have been gratified. I here insert some extracts from the letter of this distinguished traveller. "The productiveness of the gold mines of the Ural, and perhaps of the entire of Northern Asia, must certainly have drawn your attention to our gold washing and mining in the southern States. I hope shortly, by the assistance of

Professor Patterson (who is at the same time director of the mint), and Professor Renwick, of New York, both distinguished mineralogists, to be in a condition to answer your geological questions. I send you, from official documents, a special report of what has been coined at the mint, from our inland gold, since 1824."

ANNUAL DELIVERY OF GOLD AT THE MINT FROM THE MINES  
OF THE UNITED STATES.

Year	Virginia.	North Carolina.	South Carolina.	Georgia.	Tennes- see.	Alabama.	Total.
	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.	Dollars.
1824	—	5,000	—	—	—	—	5,000
1825	—	17,000	—	—	—	—	17,000
1826	—	20,000	—	—	—	—	20,000
1827	—	21,000	—	—	—	—	21,000
1828	—	46,000	—	—	—	—	46,000
1829	2,500	134,000	3,500	—	—	—	140,000
1830	24,000	204,000	26,000	212,000	—	—	466,000
1831	26,000	294,000	22,000	176,000	1,000	—	520,000
1832	34,000	458,000	45,000	140,000	1,000	—	698,000
1833	104,000	475,000	66,000	216,000	7,000	—	868,000
1834	62,000	380,000	38,000	415,000	3,000	—	898,000
1835	60,000	263,000	42,400	319,000	0,100	12,200	698,000
1836	62,000	148,000	55,200	201,400	0,300	—	467,000
	374,000	2,465,000	298,100	1,680,300	12,400	12,200	4,844,500

The profit, and with it the taste for mining speculations, have rapidly declined since 1835. In a country in which uniform prosperity is accompanied by unfettered intercourse, channels for the more profitable employment of capital will necessarily present themselves; in the history of the bullion trade, however, the masses obtained from the bowels of the earth and brought into circulation, as well as their ebb and flow in different directions, offer greater interest than the temporary profit afforded by the working of the mines.

The flow of the precious metals from Asia and America to our smaller continent, and from it partially back again to the parent source, follows, like fluids, the laws of equilibrium. The rich, but almost unexplored, regions of central Asia and Africa, form smaller insulated basins, possessing slight intercourse with the coasts, and,

consequently, with general commerce. Under the influence of western civilization, however, from Nertschinsk, the Altai, and Ural, and beyond the Atlantic from the Missouri, there exists a continual flow in the intercourse of the precious metals ; the exchangeable value of which, whether we consider the metals in relation to each other, or as the standard of the price of wares, is by no means entirely or principally determined by the increase or diminution in metallic production. This exchangeable value (I here repeat it) is affected in an equal degree by the complicated arrangements and fluctuating relations of modern society ; by an increasing and decreasing population, and its progress in civilization ; by the demand (regulated by the population) for an increased circulating capital ; by the frequently recurring necessity of remittances of bullion, as well as their destination ; by the unequal wear and tear of the two precious metals ; by the amount of paper money, as part of the circulating medium ; all acting upon the existing metallic medium of exchange. A rise in the relative value of gold as compared with that of silver, may as easily occur during a general increase in production, as a temporary depression of the barometer, and an increased elevation of temperature, with a strong north-east wind. In the meteorological changes of the atmosphere, as well as in the general exchange of the precious metals, many disturbing causes are contemporaneously at work. The effect of each individual cause, in raising or depressing prices, is determinable ; not, however (in the infinite number of accumulating disturbances), the amount of partial compensations, the nature and amount of the aggregate influence.

Any increase in the production which our imagination could call into existence, would appear infinitely trifling compared with the accumulation of thousands of years now in circulation, were we to consider these existing in coin or wrought up for useful purposes. Every increase, however inconsiderable, certainly produces its effects in the long run ; but as an accumulating population, with increased acquirements, has occasion for a greater circulating capital, so, not-



withstanding the influx, by too frequent repartition, a sensible deficiency may be brought about. Before the important discoveries on the eastern side of the Ural, which began to produce their effects in the years 1823 and 1824 only, the exchangeable value of silver, as compared with gold, in the important market of Hamburgh, was, taking the average of the years 1818 to 1822, as  $1 : \frac{1}{7\frac{1}{2}}$ ; while, subsequently it fell, on the average of the five years from 1830 to 1835, to  $1 : \frac{1}{7\frac{1}{2}}$  only. In the same interval, in order to restore the metallic currency in England, as I have already stated, 1,294,000 marks were brought into circulation. What share, therefore, has the diminished exportation of precious metals from the New World, had upon this alteration in the exchangeable value? It is scarcely necessary to take into calculation the Brazilian gold washing, since its annual supply, during that period, scarcely amounted to 1700 marks.

Now if we assume that, in the twelve years immediately subsequent to the revolution, the production of Spanish America had sunk to below one-third of what it had been during its last flourishing period (1800—1806), still the twelve years diminution only amounts to 83,200 kils. Now the Ural, in the years 1823 to 1827, has already furnished compensation to the amount of 19,300 kils; so that the diminution in the quantity of gold received in Europe only amounts, for the whole of these twelve years, to 286,000 marks. I have purposely selected an example presenting tolerably exact numerical elements. The result is, a decrease in the importation of gold, amounting to between one-fourth and one-fifth of the quantity coined, during the twelve years, by the London mint. If, therefore, we consider the exchangeable value of the precious metals, freed from the inconsiderable local casualties—the value of gold bars at Hamburg, namely—we shall be unable to discover, between 1816 and 1837, either the influence of the Asiatic mines, or the diminished production of Spanish America.

The maximum which the exchangeable value of gold attained in

1827, has been maintained, with trifling variations, till 1832; at which period a gradual, but regularly progressing, depreciation is observable. The Russian gold, from the Ural and Siberia, has partially contributed to this result. We must not, however, forget that the entire produce of Russia, whatever importance we may attach to it in other respects, in the years 1823 to 1837, only amounts to about 302,000 marks—one-nineteenth less than the diminished production of Spanish America, in the years 1816—1829. And even at the present moment, the renewed working of the gold mines in the free states of South America, has not been so general as that of silver. Besides, the North American states, scarcely recovered from their financial difficulties, have occasion for considerable remittances of bullion from Europe. This causes a drain to the westward, which, together with the other continually acting causes, may have brought about the effects which we are disposed to attribute to the increased produce of Asia alone. The principal ground, however, of the inconsiderable influence produced by the contributions from the Ural and Northern Asia lies, as I have already remarked, in the relative insignificance of the influx, compared with the quantity of precious metals already existing. The exports to Asia, which, in another place and at different periods, I have had occasion to examine, are decidedly on the decline. In the year 1831 Jacob still estimated the annual loss in balance of trade by the Cape of Good Hope at £2,000,000 sterling. As far as I can recollect, this was also the opinion of that great statesman, Huskisson, so prematurely taken from us. Notwithstanding the general use of coffee, tea, sugar, and cocoa—articles unknown in the fifteenth century—the trade in spices is still a considerable article in the passive commercial balance of Europe. In the states of the German Union, the consumption of spices, according to the most recent official enquiries, has increased, during the years 1834, 1835, and 1836, from

2,426,000  
 2,592,000  
 To 2,876,000 Prussian dollars.

In France, the consumption in the same years was only

5,476,000  
 3,982,000  
 4,856,000 francs.

In the whole of Europe, however, with a population of at least 228 millions, it is probably not less than fourteen to sixteen millions of dollars, two-thirds of which consist of vanilla, nutmegs, pepper, and cinnamon. When we reflect how considerable must be the amount of the value of spices in the present consumption of Europe, compared with what it was at the conclusion of the fifteenth century, though constituting the most important part of the then existing commerce, we shall discover another remarkable example of the potency of the metals, when exercising their concentrated force on a narrow space (at that time, the shores of the Mediterranean and western Europe). The trade in spices accidentally caused the discovery of the new continent; it led the Portuguese round the southern extremities of Africa to India, as it had the Greeks and Romans to Taprobane. At the time when Christopher Columbus sought to "reach the east through the west," Paul Toscanelli, of Florence, writes to him, as early as the 24th of June, 1474, "I am rejoiced to hear that you are approaching the accomplishment of your great and laudable desire, to reach, by a nearer route, *there*, where spices grow, 'onde naccen las especerias.'" With what complaints do the writings of the Italians abound, what imprecations are heaped upon the Portuguese, because they had penetrated by sea to India, and threatened to annihilate the spice trade of the Venetian, Pisan, and Genoese merchants! Cardinal Bembo calls it a "*malum inopinatum*," and seeks for philosophical grounds of conso-

lation. Petrus Martyr d'Anghiera writes to his learned friend, Pomponius Latus, "Portugalenses trans æquinoctium aliamque *arcton*, aromatum commercia prosequuntur, Alexandrinos ac Damasenos mercatores ad medullas extenuant." The opinion propagated by the Genoese, that the new route by the Cape of Good Hope would soon be relinquished, because the spices suffered from the sea air in the long transit, found but little credence; and the long calumniated Amerigo Vespucci (only three years after Gama), with his usual acuteness, detected the right point of view here also. He observes, in a newly-discovered letter, written to Lorenzo Pietro de Medici, 4th June, 1501, from the Cape de Verde islands, on meeting the remains of Cabral's fleet, on its return to the Tagus, "You will soon hear great news from Portugal. The king has now a rich and most important commerce in his hands (*grandissimo traffico e gran ricchezza*). May Heaven lend its blessing thereto [Vespucci was at that time in the Portuguese pay]! Now will the spices go from Portugal to Alexandria and Italy, instead of (as hitherto) from Alexandria to Portugal. Such is the way of the world (*Così va el mondo*)!"\*

*Berlin, June, 1838.*

\* A pud is equal to thirty-six pounds weight. The kilogramme is about two and a quarter pounds weight. The mark of silver is two pounds two shillings sterling; the mark of gold, eight ounces. The piastre is four shillings and fourpence sterling.





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